

Set	Items	Description
S1	98	AU={REYNOLDS, W? OR REYNOLDS W?}
S2	1	S1 AND IC=G06F-015?
S3	0	S2 AND (COOKIE? OR (CLIENT OR PERSISTENT)())STATE)
S4	0	S1 AND (COOKIE? OR (CLIENT OR PERSIST?)())STATE)
S5	9	S1 AND IC=G06F?
S6	9	IDPAT (sorted in duplicate/non-duplicate order)
S7	8	IDPAT (primary/non-duplicate records only)

File 347:JAPIO Nov 1976-2003/Nov(Updated 040308)
(c) 2004 JPO & JAPIO

File 348:EUROPEAN PATENTS 1978-2004/Mar W01
(c) 2004 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20040311,UT=20040304
(c) 2004 WIPO/Univentio

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200417
(c) 2004 Thomson Derwent

7/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015892811 **Image available**
WPI Acc No: 2004-050646/200405
XRPX Acc No: N04-040910

Program profiling method for data processing system, involves tracing
references of profile data area to reclaim unmarked objects as free space
for memory heap that stores allocated objects were previously allocated

Patent Assignee: INT BUSINESS MACHINES CORP (IBM)
Inventor: ALEXANDER W P; LEVINE F E; REYNOLDS W R ; URQUHART R J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6658652	B1	20031202	US 2000589798	A	20000608	200405 B

Priority Applications (No Type Date): US 2000589798 A 20000608

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6658652	B1	49	G06F-009/44	

Abstract (Basic): US 6658652 B1

NOVELTY - The method involves allocating an object during execution of a function. An object allocation metric obtains a profile data area reference for the function, where the references are stored in a memory heap (372). An object deallocation metrics traces the reference and reclaims unmarked objects as free space for the heap. The object allocation and deallocation metrics are compared to determine memory leak.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a data processing system for profiling a program
- (2) a computer program product for profiling a program.

USE - Used for profiling a program in a data processing system.

ADVANTAGE - The deallocation metrics efficiently traces the profile data area reference to reclaim the unmarked objects as free space for the shadow heap. The deallocation metrics and the allocation metrics provide accurate leak detection in an object-oriented environment during real-time trace processing.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram depicting a Java virtual machine.

Java virtual machine (350)
Class loader subsystem (352)
Execution engine (356)
Native method interface (358)
Memory heap (372)
pp; 49 DwgNo 3B/37

Title Terms: PROGRAM; PROFILE; METHOD; DATA; PROCESS; SYSTEM; TRACE;
REFERENCE; PROFILE; DATA; AREA; RECLAIM; UNMARKED; OBJECT; FREE; SPACE;
MEMORY; HEAP; STORAGE; ALLOCATE; OBJECT; ALLOCATE

Derwent Class: T01

International Patent Class (Main): G06F-009/44

File Segment: EPI

7/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015477740 **Image available**
WPI Acc No: 2003-539887/200351

Related WPI Acc No: 1999-543097; 2000-349476; 2001-376028; 2001-662363;
2002-153912; 2002-279430; 2003-361596; 2003-379227; 2003-438381;
2003-531249; 2003-553776; 2004-058534

XRPX Acc No: N03-428129

Program profiling method for detecting memory leakage in object oriented environment, involves updating object allocation metrics in profile data

area, by incrementing of object and byte allocation counts

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: ALEXANDER W P; HOWARD J D; LEVINE F E; REYNOLDS W R ; URQUHART R J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6560773	B1	20030506	US 97989725	A	19971212	200351 B
			US 9852329	A	19980331	
			US 98177031	A	19981022	
			US 99343438	A	19990630	
			US 99343439	A	19990630	
			US 99414331	A	19991007	

Priority Applications (No Type Date): US 99414331 A 19991007; US 97989725 A 19971212; US 9852329 A 19980331; US 98177031 A 19981022; US 99343438 A 19990630; US 99343439 A 19990630

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6560773	B1	34	G06F-017/30		CIP of application US 97989725
					CIP of application US 9852329
					CIP of application US 98177031
					CIP of application US 99343438
					CIP of application US 99343439
					CIP of patent US 6002872
					CIP of patent US 6005492
					CIP of patent US 6311325

Abstract (Basic): US 6560773 B1

NOVELTY - An object is allocated during execution of a program. Object allocation metrics in the profile data area associated with the program is updated by incrementing any one of an object allocation count and byte allocation count in the profile data area. The object allocation metrics is compared with object deallocation metrics to identify memory leaks.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) data processing system for profiling program; and
- (2) computer program product for profiling program.

USE - For profiling program for detecting memory leakage in object-oriented environment, in data processing system (claimed) for software development application.

ADVANTAGE - The object allocation code, the object deallocation code, and the profiler are coordinated such that the object allocations and object deallocations are tracked through the profiler. Memory allocations and deallocations are not only tracked but also attributed to the methods that cause the memory transactions and the execution context in which the methods performed the memory transactions. The number of allocations, deallocations, number of bytes allocated and deallocated, for each method and/or thread are traced, and the trace information is post-processed and presented as useful information to a software developer or analyst.

DESCRIPTION OF DRAWING(S) - The figures show the flowcharts depicting the process followed by object allocation code and object deallocation code.

pp; 34 DwgNo 20, 22/23

Title Terms: PROGRAM; PROFILE; METHOD; DETECT; MEMORY; LEAK; OBJECT; ORIENT ; ENVIRONMENT; UPDATE; OBJECT; ALLOCATE; PROFILE; DATA; AREA; INCREMENT; ONE; OBJECT; BYTE; ALLOCATE; COUNT

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

014919045 **Image available**
WPI Acc No: 2002-739752/200280
XRPX Acc No: N02-582764

Object-oriented environment operation method in computer system, involves allocating memory locations in memory within object-oriented environment for storing persistence indicator indicting allocation of memory to object

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: HOWARD J D; KUIPER K G; LEVINE F E; **REYNOLDS W R** ; URQUHART R J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6457111	B1	20020924	US 99460774	A	19991214	200280 B

Priority Applications (No Type Date): US 99460774 A 19991214

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6457111	B1	17	G06F-012/00	

Abstract (Basic): US 6457111 B1

NOVELTY - The memory locations are allocated in a memory within the object-oriented environment for respectively storing an object and for storing a persistence indicator that indicates the memory allocation to the object and total number of memory bytes allocated to the object.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Computer system; and
- (2) Computer program product for object-oriented environment operation.

USE - For operating object-oriented environment within computer system (claimed).

ADVANTAGE - The persistence indicator that indicates the allocation of the memory for the object occurred during the execution of the object-oriented environment, is allocated easily.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining the memory allocation for an object having a persistence indicator.

pp; 17 DwgNo 5/10

Title Terms: OBJECT; ORIENT; ENVIRONMENT; OPERATE; METHOD; COMPUTER; SYSTEM ; ALLOCATE; MEMORY; LOCATE; MEMORY; OBJECT; ORIENT; ENVIRONMENT; STORAGE; PERSISTENT; ALLOCATE; MEMORY; OBJECT

Derwent Class: T01

International Patent Class (Main): **G06F-012/00**

File Segment: EPI

7/5/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014869168 **Image available**
WPI Acc No: 2002-689874/200274
XRPX Acc No: N02-544133

Garbage collection instrumentation method for data processing system, involves generating trace file by writing data retrieved from single pass object analysis into output file

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: BERRY R F; BRYANT R M; GU W; HOWARD J D; **REYNOLDS W R** ; URQUHART R J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6434575	B1	20020813	US 98190562	A	19981112	200274 B

Priority Applications (No Type Date): US 98190562 A 19981112

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6434575	B1	10	G06F-012/00	

Abstract (Basic): US 643 5 B1

NOVELTY - A single pass analysis of each object on an object heap is performed. Object data retrieved in the analysis is written to an output file. A set of live objects and a set of root objects that are the subsets of the live objects are identified and a trace file is generated.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Data processing system; and
- (2) Computer readable medium storing garbage collection instrumentation program.

USE - For enabling garbage collection in data processing system (claimed).

ADVANTAGE - Enables effective generation of trace file in less number of processing cycles by performing single-pass analysis of several objects in a heap. Also allows user to dynamically intervene in the garbage collection process while an application is running and permits the user to gather data of his interest when desired.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart illustrating the garbage collection instrumentation procedure.

pp; 10 DwgNo 2A/2

Title Terms: GARBAGE; COLLECT; INSTRUMENT; METHOD; DATA; PROCESS; SYSTEM; GENERATE; TRACE; FILE; WRITING; DATA; RETRIEVAL; SINGLE; PASS; OBJECT; ANALYSE; OUTPUT; FILE

Derwent Class: T01

International Patent Class (Main): G06F-012/00

File Segment: EPI

7/5/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014625911

WPI Acc No: 2002-446615/200248

XRPX Acc No: N02-351944

Application instrumenting procedure for data processing system, involves recognizing necessity of performance data measurement during deployment of application in each version and accordingly the version is modified

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: BERRY R F; GARDE S J; KERSCH D M; REYNOLDS W R ; SKELTON M H

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
GB 2368689	A	20020508	GB 200115405	A	20010625	200248 B

Priority Applications (No Type Date): US 2000605467 A 20000628

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
GB 2368689	A	44	G06F-011/34	

Abstract (Basic): GB 2368689 A

NOVELTY - The performance data associated with object oriented application is estimated, based on which the application is deployed in two different versions of instrumentation module. When the performance data is to be measured in each deployment, the primary version is replaced by secondary version. When the performance data measurement is not required, the secondary version is re-substituted with primary version.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Apparatus for instrumenting application within data processing system; and
- (2) Computer program.

USE - For enhancing program development in distributed data processing system linking LAN, WAN, Internet.

ADVANTAGE - Reduces overhead effect of performance instrumentation, by minimizing time consumption due to unwanted code instrumentation.

pp; 44 DwgNo 0/9

Title Terms: APPLY; PROCEDURE; DATA; PROCESS; SYSTEM; RECOGNISE; NECESSARY;
PERFORMANCE; DATA; MEASURE; DEPLOY; APPLY; VERSION; ACCORD; VERSION;
MODIFIED

Derwent Class: T01

International Patent Class (Main): G06F-011/34

International Patent Class (Additional): G06F-009/44

File Segment: EP